

# ICOM IC-735

## HF Transceiver/General Coverage Receiver



**ICOM**

*First in Communications*

## HF ALL BAND SSB CW AM FM TRANSCEIVER

# IC-735

The IC-735 is what you've been asking for...the most compact and advanced full-featured HF transceiver with general coverage receiver on the market.

**Ultra Compact.** Measuring only 3.7 inches high by 9.5 inches wide by 9.4 inches deep, the 100 watt IC-735 is well-suited for mobile operation in cars, airplanes and boats, as well as for base station operation.

**All Band.** The IC-735 covers all amateur HF frequencies from 1.8MHz to 30MHz, including the three new bands of 10MHz, 18MHz and 24MHz. The IC-735 also has general coverage receive capability from 100kHz to 30MHz.

**All Mode.** SSB, CW, FM and AM (transmit and receive) are built-in. The rear panel of the IC-735 has easy-to-access terminals for AFSK (audio frequency shift keying) operation.

**Scanning.** The IC-735 has three scanning functions...memory scan, programmed scan and mode scan. The memory scan function monitors all the memory channels sequentially. Programmed scan functions between any two programmed frequencies. And mode scan monitors only those memories which contain frequencies with the same mode. Scanning of the frequencies, memories and bands is possible from the transceiver controls, or scan all frequencies from the IC-HM12 scanning microphone which is provided.

**Dual Digital VFOs.** ICOM's "new feel" dual digital VFOs, with 10Hz tuning steps, and an advanced transfer system between the memories, provide the ultimate in frequency agility. Fine tuning is a snap. The main tuning control and adjacent switches select either 10Hz, 1kHz or 1MHz tuning increments.

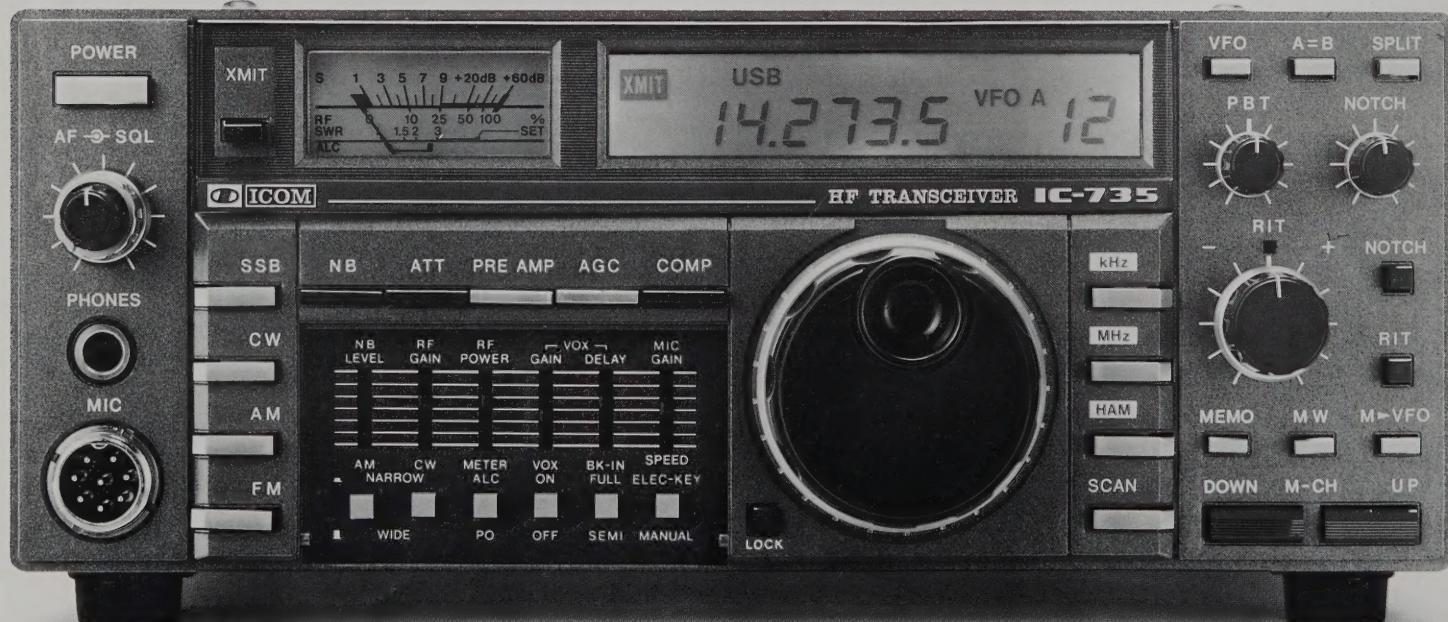
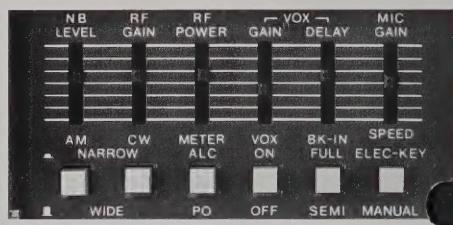
**Full QSK.** The IC-735 has both full break-in and semi break-in CW capability. This feature is standard.

**12V Operation.** For mobile applications, the IC-735 comes with a DC power cable for use with a car battery or any other 12-15V DC power source.

### SIMPLIFIED FRONT PANEL

**LCD Readout.** ICOM's new liquid-crystal display with green, illuminating backlight provides high readability even in sunlight. The display indicates the frequency, VFO, operating mode, memory channel, split mode and scan mode. A built-in dimmer circuit allows adjustment of the backlighting.

**Switch Panel.** Controls which require rare adjustment are placed behind a protective cover on the front panel. Controls included on the switch panel are noise blower level, RF gain, RF power, VOX

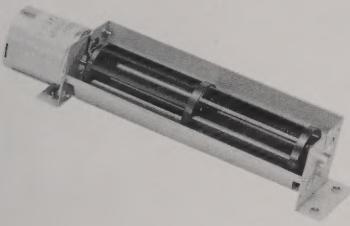
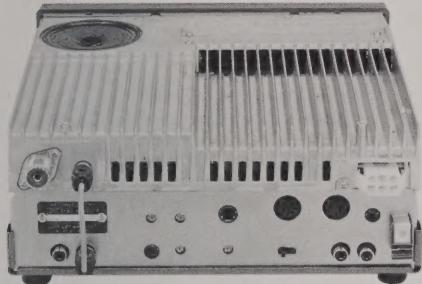


ICOM'S Comp

gain, VOX delay, mic gain, filter selection, meter function, CW break-in and CW electronic keyer/manual switch.

## EXCELLENT PERFORMANCE

The IC-735 is a high performer on all the ham bands, and as a general coverage receiver, the IC-735 is exceptional.



## TRANSMITTER

**100% Duty Cycle.** ICOM utilizes a squirrel-cage fan installed in a newly designed heatsink for cooling purposes. Under normal operating conditions, the IC-735 will continue to transmit with no power reduction in an ambient temperature of 25°C even when transmitting for extended periods of time.

A monitor circuit controls the supply of cool air. At the beginning of a transmission, the fan operates at low speed to supply cool air. If the PA unit reaches a temperature of 50°C, the fan motor increases to medium speed; and at 90°C the fan runs at its highest speed.

**Speech Compressor.** The IC-735 has a low-distortion, AF speech compressor circuit which provides greater talk power. By increasing the average power of the transmitted signal, better communications is possible under weak signal conditions.

## RECEIVER

**105dB Dynamic Range.** The IC-735 has a 105dB dynamic range and is an extremely quiet, birdy-free receiver thanks to its 70.451MHz first IF circuit which uses 2 high-quality, crystal filters to virtually eliminate spurious responses.

**DFM System.** The ICOM DFM (Direct Feed Mixer) feeds the incoming signals directly into the high-level first mixer stage. Developed by ICOM, this advanced system produces a higher spurious response rejection ratio, a higher receiver sensitivity, and a wider dynamic range.

**Preampl and Attenuator.** A 10dB preamplifier and a 20dB attenuator are built-in. The preamp increases receiver sensitivity while the attenuator provides added protection from strong adjacent stations.

**PBT and Notch Control.** The IC-735 has a built-in passband tuning system that allows continuous width adjustment of the IF passband. In addition, a sharp IF notch filter provides clear reception even in the presence of a strong interfering signal.

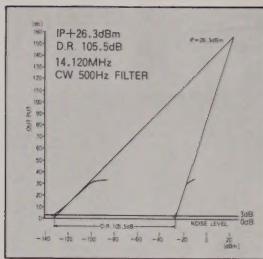
**New PLL.** The IC-735 has superior frequency stability and receive sensitivity by virtue of ICOM's newly developed PLL (phase-locked loop) system. With an extremely low carrier-to-noise ratio, the IC-735 provides extremely quiet reception. Additionally, a newly designed, temperature-stabilized reference oscillator provides rock-solid stability.

## OPTIONS

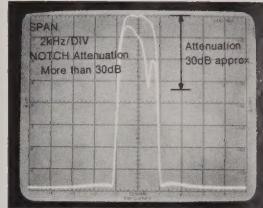
Options include a new line of accessories, including the AT-150 automatic antenna tuner and the PS-55 power supply. For the CW operator, the IC-EX243 electronic keyer unit is available, as well as an FL-32 500Hz, 9MHz and an FL-63 250Hz, 9MHz CW filter.

For 29MHz repeater operation, ICOM offers a UT-30 subaudible tone encoder. Also available is an assortment of antenna tuners, speakers and microphones to complete your system.

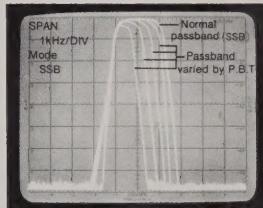
Intercept point and dynamic range



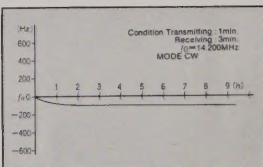
Notch filter characteristic



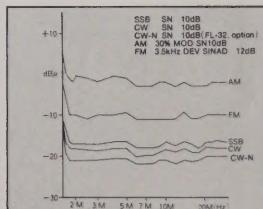
Passband tuning operation



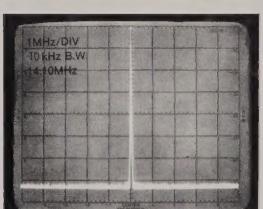
Frequency stability characteristic



Receiver sensitivity characteristic



Transmission spurious characteristic



# Impact Advantage

# SPECIFICATIONS

## GENERAL

Number of semiconductors	Transistors	124	Emission modes	A3J (J3E) SSB (Upper and Lower Sideband)
	FETs	18		A1 (A1A) CW
	Diodes	258		A3 (A3E) AM
	ICs (Includes CPU)	42		F3 (F3E) FM
Frequency coverage	Ham Bands		Harmonic output	More than 40dB below peak power output.
	1.8MHz ~ 2.0MHz		Spurious output	More than 50dB below peak power output.
	3.4MHz ~ 4.1MHz		Carrier suppression	More than 40dB below peak power output.
	6.9MHz ~ 7.5MHz		Unwanted sideband	More than 50dB down at 1000Hz AF input.
	9.9MHz ~ 10.5MHz		Microphone	600 ohm electret condenser microphone with push-to-talk switch and scanning buttons.
	13.9MHz ~ 14.5MHz			
	17.9MHz ~ 18.5MHz			
	20.9MHz ~ 21.5MHz			
	24.4MHz ~ 25.1MHz			
	27.9MHz ~ 30.0MHz			
	General Coverage (Receive Only)			
	0.1MHz ~ 30.0MHz			
Usable temperature range	-10°C ~ +60°C (+14°F ~ +140°F)			
Frequency control	CPU based 10Hz step digital PLL synthesizer. Independent Transmit/Receive frequency available.			
Frequency readout	6 digit 100Hz illuminated LCD			
Frequency stability	Less than ±200Hz from 1 minute after switch ON to 60 minutes. Less than ±30Hz after 1 hour at 25°C Less than ±500Hz in the range of 0°C ~ +50°C			
Power supply requirements	13.8V DC ±15% (negative ground) Current drain 20A maximum at 200W input. AC power supply is available for AC operation.			
Current drain (at 13.8V DC)	Transmitting	At 200 watts input	Approx.	20A
	Receiving	At maximum audio output	Approx.	1.5A
		Squelched	Approx.	1.2A
Antenna impedance	50 ohms unbalanced			
Weight	5kg (Includes options FL-32, IC-EX243 and UT-30.)			
Dimensions	94(107)mm(H) x 241(244)mm(W) x 239(272)mm(D) ( ) Dimensions include projections.			

## TRANSMITTER

RF power	SSB (A3J) : 200 watts PEP input CW (A1) : 200 watts input AM (A3) : 40 watts output FM (F3) : 200 watts input Continuously adjustable output power from 10 watts to maximum.
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Emission modes	A3J (J3E) SSB (Upper and Lower Sideband) A1 (A1A) CW A3 (A3E) AM F3 (F3E) FM
Harmonic output	More than 40dB below peak power output.
Spurious output	More than 50dB below peak power output.
Carrier suppression	More than 40dB below peak power output.
Unwanted sideband	More than 50dB down at 1000Hz AF input.
Microphone	600 ohm electret condenser microphone with push-to-talk switch and scanning buttons.
<b>RECEIVER</b>	
Receive system	Triple conversion superheterodyne with continuous bandwidth control.
Receive modes	A3J (J3E) SSB (Upper and Lower Sideband) A1 (A1A) CW A3 (A3E) AM F3 (F3E) FM
Intermediate frequencies	1st: SSB, AM, FM 70.4515MHz CW 70.4506MHz 2nd: SSB, AM, FM 9.0115MHz CW 9.0106MHz 3rd: SSB, CW, AM, FM 455kHz
Sensitivity	SSB, CW 0.1 ~ 1.6MHz Less than 1.0µV for 10dB S/N 1.6 ~ 30MHz Less than 0.15µV for 10dB S/N AM (NARROW FILTER selected) 0.1 ~ 1.6MHz Less than 6µV for 10dB S/N 1.6 ~ 30MHz Less than 1µV for 10dB S/N
FM	1.6 ~ 30MHz Less than 0.5µV for 12dB SINAD
Squelch sensitivity	FM 0.3µV
Selectivity	SSB, CW 2.3kHz @ -6dB, 4.0kHz @ -60dB AM 6.0kHz @ -6dB, 18kHz @ -50dB FM 15kHz @ -6dB, 30kHz @ -60dB
Spurious and image response	More than 80dB
rejection	
Notch filter attenuation	More than 30dB
Audio output	More than 3 watts @ 10% distortion with 8 ohm load.
Audio output impedance	8 ohms

## ACCESSORIES

AT-150	AUTOMATIC ANTENNA TUNER (Matching style and size with IC-735)	SM-8	DESK MICROPHONE
IC-2KL	500W LINEAR AMPLIFIER	IC-SM6	DESK MICROPHONE
IC-AT500	AUTOMATIC ANTENNA TUNER	IC-HP1	COMMUNICATION TYPE HEADPHONES
PS-55	AC POWER SUPPLY 13.8V, 20A	IC-EX243	ELECTRONIC KEYER UNIT
IC-PS30	AC POWER SUPPLY 13.8V, 25A	UT-30	PROGRAMMABLE TONE ENCODER UNIT (88.5Hz preset)
IC-SP3	EXTERNAL SPEAKER	FL-32	CW NARROW FILTER (500Hz/-6dB)
SP-7	EXTERNAL SPEAKER WITH MATCHING STYLE AND SIZE	FL-63	CW NARROW FILTER (250Hz/-6dB)
IC-MB5	MOBILE MOUNTING BRACKET		



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All stated specifications are approximate and subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions.